UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/414,104	10/07/1999	MASAKI OKADA	1232-4578	2794

27123 7590 11/02/2004

MORGAN & FINNEGAN, L.L.P.
3 WORLD FINANCIAL CENTER
NEW YORK, NY 10281-2101

EXAMINER	
TRAN, NHAN T	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/414,104	OKADA ET AL.	
	Examiner	Art Unit	
	Nhan T. Tran	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2004 and 04 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/30/2004 and 6/4/2004 has been entered.

Response to Arguments

2. Applicant's arguments filed 6/4/2004 with respect to independent claims 1, 23 and 38 have been fully considered but they are not persuasive.

Regarding independent claims 1, 23 and 38, the Applicants argue that the lens controlling microcomputer 115 depends on the microcomputer 125 to begin control of the lens system, and therefore, Mogi fails to teach the claimed feature of "...said second system controller does not require a control signal from said first system controller **to begin** the control of said mechanical driving member." However, it is clearly seen from Mogi, *col. 3, lines 5-15 and col. 8, lines 7-10* that when the power is turned on, the lens microcomputer 115 executes the control program that is stored in the lens microcomputer for resetting the lens without depending on a control signal from the camera microcomputer 125. Since the lens microcomputer executes its own

initialization file, it depends on its own control signal **to begin** (initialize) the control of the lens. The above Applicants arguments of the lens microcomputer 115 being dependent of the camera microcomputer 125 which sends a control signal to the lens camera microcomputer 115 is not during the initialization (beginning control of the lens) as disclosed by Mogi. The Examiner's position is taken for the period of time during initialization ("resetting operation") that is described in Fig. 6 and col. 7, lines 10-55, wherein lens resetting operation is executed by the lens microcomputer 115 and fading operation is executed by the camera microcomputer 125 right after the power source is turned on. The lens microcomputer 115 notifies (signal F1) the camera microcomputer 125 when the resetting operation is completed but not receiving any control signal from the camera microcomputer 125 during that time period. Therefore, the new amended claims 1, 23 and 38 are still met by Mogi for at least reasons discussed above.

3. Applicant's arguments with respect to independent claim 40 have been considered but are moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 6, 8-10, 16, 23-24, 31, 38-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Mogi (US 6,157,394).

Regarding claim 1, Mogi discloses an electronic device comprising:

a mechanical driving member (106-111) which performs mechanical operations (see Fig. 5);

a first system controller (camera microcomputer 125) which controls the overall operation of the electronic device (see Fig. 5; col. 6, lines 54-65);

a second system controller (lens microcomputer 115), which controls a part of the device including the mechanical driving member, operating independently of the first system controller (see Fig. 5; col. 5, line 66 – col. 6, line 6, wherein the lens microcomputer controls the operations of the focusing lens 105, zooming lens 102 and iris 103 independently using the information transmitted from circuits 120 & 121);

wherein in accordance with turning on power supply (inherent power source to all components of the electronic device) to the first system controller (125), the second system controller (115) begins to control (resetting operation) the mechanical driving member in parallel to a control preparatory operation of the first system controller which begins in accordance with turning on of power supply to the first system controller, and wherein the second system controller does not required a control signal from the first system controller to begin the control of the mechanical driving member (see Fig. 6; col. 3, lines 5-15; col. 4, lines 13-17, 52-59 & col. 7, lines 10 – col. 8, line 10 and note that fading control operation is performed to prepare for a better display of captured images. The control preparatory operation of such fading is initialized

at step 203 and ended at step 206 by the camera microcomputer 125 in parallel to the lens initialization process at steps 204 & 205 that is performed by the lens microcomputer 115).

Regarding claim 2, camera microcomputer (125) is a central processing unit, and wherein the camera microcomputer starts an operating system immediately after turning on of the power supply to the camera and also operates a control application program (fading control application). It is noted that the camera must start an operating system before operating a control application program for fading (see col. 7, lines 17-21).

Regarding claim 6, Mogi also discloses that the second system controller (115) is a central processing unit (for the lens) and is always powered (see Figs. 5 & 6 wherein the power supply is always on under YES).

Regarding claim 8, it is clear that the second system controller is a hard-wired logic circuit as shown in Fig. 5.

Regarding claim 9, the first system controller must have processing speed faster than that of the second system controller since the first system controller controls the entire camera operation which must require a faster processing speed compared to the second system controller which only controls the lens device (see col. 6, lines 54-58).

Regarding claim 10, the electric consumption of the second controller must be lower than that of the first system controller because the first system controller controls the entire camera operation while the second system controller controls only the lens device which requires less power supply (see col. 6, lines 54-58).

Regarding claim 16, Mogi's camera inherently has an in-use status (when the camera is turned on and being used by virtue of display being ON) and a non-use status (when the camera is turned off and not being used) which is different from the in-use status, and wherein the second system controller controls the mechanical driving member in parallel to the control preparatory operation on the overall device by the first system controller, so as to cause the device to enter the in-use status (powered on and used) from the non-use status (powered off and not used). See also claim 1 for powering on.

Regarding claim 23, see the analysis of the apparatus claim 1.

Regarding claim 24, see the analysis of claim 2.

Regarding claim 31, see the analysis of claim 16.

Regarding claim 38, see the analysis of the apparatus claim 1.

In addition, the computer program product having readable program code must be stored in a memory of the camera apparatus in order for the microcomputers 125 and 115 to execute instruction code to perform all functions as disclosed.

Regarding claim 39, see the analysis of claim 16.

5. Claims 3, 4, 25 & 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mogi (US 6,115,064) in view of Winter (US 4,521,678).

Regarding claim 3, Mogi does not teach that if the completion of the control preparatory operation has not been notified within a predetermined period from the first system controller since the turning on of the power supply to the first system controller, the second system controller returns the first system controller to a status before the power supply was turned on to the first system controller, and turns off the power supply to the first system controller.

Winter teaches a power management control method during initialization process of computer means in which two control processes are implemented. Upon receiving the supply voltage after the power switch has been turned on, the computer means performs predetermined initialization procedures. If the computer means does not successfully complete the prescribed initialization procedures before the predetermined time interval elapses, the computer means must return the computer system to its initial status before the supply voltage was turned on to ensure proper operation of the system and then turns off the supply voltage to the system's

circuitry to avoid excessive drain on the battery as suggest in col. 3, lines 42-46 & line 59 to col. 4, line 4.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the camera's initialization processes in Mogi by configuring the power management as taught by Winter so that if the completion of the control preparatory operation has not been notified within a predetermined period from the first system controller since the turning on of the power supply to the first system controller, the second system controller returns the first system controller to a status before the power supply was turned on to the first system controller, and turns off the power supply to the first system controller to ensure proper operation of the camera and avoid excessive drain on the battery.

Regarding claim 4, inherent in the system operation in Mogi and Winter is the predetermined period is longer than the period from turning on the power supply to the first system controller to normal completion of the control preparatory operation by the first system controller in order for the system to function properly.

Regarding claim 25, see the analysis of claim 3.

Regarding claim 26, see the analysis of claim 4.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mogi (US 6,115,064) in view of Yamagami et al (US 6,229,954).

Regarding claim 7, Mogi discloses the power source in the video camera apparatus is turned on by the first system controller via operating part (126) as shown in col. 6, lines 61-63 & col. 7, lines 17-20. Mogi does not disclose that the second system controller (115) controls the power source to the first system controller (125). However, Yamagami teaches a camera having an operation part (15) consisting all operating buttons including a power switch controlled by the mechanical & operation part control CPU (4) for turning on power supply to the camera. This mechanical and operation part control CPU (4) must also control the power supply to the system control CPU (13) (see Fig. 5; col. 16, lines 24-30 for all operating buttons of the camera located in operation part 15 and under control of CPU 4).

Therefore, it would have been obvious to one of ordinary skill in the art to make an alternative configuration to a power supply management that would be controlled by a second system controller as an obvious variant.

7. Claims 11, 17, 28 & 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mogi (US 6,115,064).

Regarding claim 11, although Mogi discloses that the camera is a video camera instead of a digital still camera, it is notoriously well known in the art to improve a video camera to a digital video camera that is capable to capture both motion and still images.

Therefore, it would have been obvious to one of ordinary skill in the art to enhance a video camera to capture a digital still image in a still mode.

Regarding claims 17, 28 & 32, see the analysis of claims 1 & 11.

8. Claims 12-15, 18-22, 29-30 & 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mogi (US 6,115,064) in view of Goo et al (US 5,309,195).

Regarding claim 12, Mogi does not teach mechanical driving member including a lens barrier which protects the optical system of the digital still camera. As taught by Goo, a lens cap is used for protecting the optical system of the camera (see col. 3, lines 35-37).

It would have been obvious to one of ordinary skill in the art to provide the camera with a lens barrier to protect the lens device from damage or dirt.

Regarding claim 13, Goo teaches that the lens cap is opened by operating the lens group driving motor in clockwise when the power switch is turned on in parallel to the control preparatory operation as analyzed in claim 1 (see Goo in Fig. 2, col. 3, lines 43-50 for steps 110, 120, 130, 170, 180).

Regarding claim 14, Mogi does not teach that the mechanical driving member includes a collapsible barrel of the digital camera. However, in Goo, it is clear that the camera includes a collapsible barrel to retract the lens and close the lens cap by operating the lens group driving motor in counterclockwise direction until the lens cap is closed which also indicates that the lens group has been collapsed into the camera body (see Fig. 2).

It would prevent lens device from damage by using collapsible lens type wherein the lens group is retracted into the camera body when power supply is turned off.

Therefore, it would have been obvious to one of ordinary skill in the art to implement the collapsible lens type for preventing the lens device from damage when the power supply is turned off and the camera is not in use.

Regarding claim 15, see the analysis of claim 13.

Regarding claim 18, the claimed limitations are analyzed with respect to claim 14 (see Goo, Fig. 2; col. 3, lines 54-66 for the lens device being collapsed into the camera body when a predetermined time is passed without any input operation from the user).

Regarding claim 19, Goo also teaches that the lens device is extending to a wide-angle side position (forward direction) from collapsed position (at lens cap closed in step 130) when the power control switch is turned on (see Fig. 2; col. 3, lines 43-45).

Regarding claim 20, see the analysis of claim 12.

Regarding claim 21, Goo discloses the lens cap being opened when the camera is in an image sensing enabled status as shown in Fig. 2 at steps 100-190.

Regarding claim 22, when the camera is not used and being turned off, the lens barrier which protects the image sensing lens is closed (see Fig. 2).

Regarding claim 29, see the analysis of claims 12 & 13.

Regarding claim 30, see the analysis of claims 14 & 15.

Regarding claims 33-37, see the analyses of claims 18-22, respectively.

9. Claims 5 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mogi (US 6115064) in view of Goo et al (US 5,309,195) and in further view of Ozawa (US 5,721,987).

Regarding claim 5, Mogi shows the operating part (126) for operating the camera in Fig. 5; col. 6, lines 61-63.

Mogi does not teach that if no operation instruction has been inputted by the operation unit within a predetermined period, the second system controller returns the mechanical driving member to a status before the power supply was turned on to the first system controller, and turns off the power supply to the first system controller. However, as taught by Ozawa, the camera power source is turned off when no input operation has been performed for five minutes for prolonging the useful life of the power source for the camera (see col. 7, lines 20-23).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Mogi with Ozawa by including power management control for automatically turning off the camera

power source if no operation instruction has been inputted within a predetermined period for prolonging the useful life of the power source for the camera.

Although Mogi and Ozawa do not expressly teach that the mechanical driving member is returned to initial state before the power supply was turned on, this mechanical driving operation is well known in the art and is taught by Goo for driving lens group as well as lens cap to the initial state of closed or off position after a predetermined time is passed for safety retracting the lens device into camera body and saving camera power consumption as shown in Fig. 2, col. 1, lines 52-53; col. 3, line 54 – col. 4, line 2.

Therefore, it would have been obvious to one of ordinary skill in the art to combine Mogi, Ozawa and Goo to implement a complete power management and mechanical driving processes for a camera by returning mechanical driving member to a status before the power supply was turned on to the camera system controller and turning off the power supply to the camera system controller in case there has been no operation instruction has been inputted by the operation unit within a predetermined period for safety retracting the lens device into camera body and saving camera power consumption.

Regarding claim 27, see the analysis of claim 5.

10. Claims 40 – 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (US 6,157,394) in view of Nishi (US 2003/0151728).

Regarding claim 40, Anderson discloses an image sensing apparatus (Fig. 1) comprising:

image sensing means (224) for converting an optical image of an object to electric signals and outputting the electric signals (see Figs. 1 & 2);

mechanical drive means (234) for driving a mechanical component (220) of the image sensing apparatus (see Fig. 2);

signal processing means (228 or 420) for generating image signals by processing the electric signals outputted from the image sensing means (see Figs. 2 & 5; col. 5, lines 4-25);

file system means for storing the image data generated by the image processing means to a storage medium (see Fig. 4; col. 4, line 60 – col. 5, line 3);

control means (CPU 344) for controlling the mechanical drive means (via system bus 116 and interface 232), the signal processing means, and the file system means in response to turning on (at 356 & 342) of the image sensing apparatus (Figs. 2-4).

Although Anderson does not explicitly disclose the initializations of the mechanical drive means, the signal processing means, and the file system means are started simultaneously in response to turning on of the image sensing apparatus, Anderson clearly teaches the CPU is capable of concurrently running multiple software routines to control various processes of the camera (110) within a multi-threading environment as described in col. 3, line 64 – col. 4, line 6 to operate the camera system including mechanical drive means, signal processing means and file system means. It is seen that when the power supply (356) is turned on, the multi-threaded CPU (344) must initialize all controllable components including mechanical drive means, signal processing means and file system means for the camera (110) to function properly. Furthermore, as taught by Nishi, it is well known that parallel processing would permit a lens adjustment

(which can take a long time) to take place in parallel to adjustments of other parts of an electronic device to *reduce overall setup time* (see Nishi, [0245]).

Therefore, it would have been obvious to one of ordinary skill in the art to realize the advantage of the multi-threaded CPU taught by Anderson in addition to the teaching of Nishi to configure each of initializations of the mechanical drive means, the signal processing means and the file system means to be run independently and simultaneously (no control signal from each other) so that the startup time of the camera is greatly reduced.

Regarding claim 41, Anderson shows the operation of obtaining information on the removable memory in Fig. 4.

Regarding claim 42, the information in the storage medium must include at least one of file format (i.e., JPEG) (see col. 6, lines 47-54).

Regarding claim 43, Anderson also shows motors (234) for driving lens (220) in Fig. 2.

Regarding claim 44, Anderson clearly discloses a real time, multi-threaded CPU as analyzed in claim 40.

11. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al and Nishi as applied to claim 41 and in further view of Fukushima (JP 06-095754).

Regarding claim 45, Anderson and Nishi do not teach a DMA controller wherein the CPU performs initialization of the mechanical drive means and signal processing means during idle time of the DMA. As taught by Fukushima, a DMA controller is implemented in a computer system to simultaneously transfer system file (processing program) from an auxiliary memory into system memory (system RAM) for the initialization process just after power source is turned on, and thereafter the DMA must be idle in order for the CPU to execute the processing program for initializing all system's functions as well as I/O devices of the system to shorten waiting time during system initialization (see Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art to further implement DMA process to simultaneously perform data transmission from a storage medium by file system means at the initialization by the DMA, and the CPU performs initialization of the mechanical drive means and signal processing means during idle time of the DMA for shortening waiting time during initialization processes.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (703) 605-4246. The examiner can normally be reached on Monday - Thursday, 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NT.

ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600